I. WORK TO BE PERFORMED – WETLAND SEDIMENT HOT SPOT REMEDIATION WORK PLAN

As described in the Final Screening Level Ecological Risk Assessment (SLERA) for the Site, concentrations of several chemicals of potential ecological concern (COPECs) were detected in wetland sediment samples at concentrations exceeding screening levels. Figure 3 shows COPEC concentrations in wetland sediment samples that exceed the midpoint of their respective Effects Range Low (ERL)/ Effects Range Medium (ERM) values or Apparent Effects Threshold (AET) values, where no ERL or ERM values are available. COPEC concentrations that exceed their ERM or AET values are highlighted in yellow on this figure. As shown on this figure, the predominant COPECs detected in wetland sediment samples at concentrations above the ERL/ERM midpoint were polynuclear aromatic hydrocarbons (PAHs). Most of the PAH concentrations in wetland sediment samples exceeding the ERL/ERM midpoint are located in three areas: (1) immediately northeast of the former surface impoundment (where most of the maximum PAH concentrations were observed); (2) at sample location NB4SE08 just north of Marlin Avenue in the northern part of the Site; and (3) immediately south of the former surface impoundments. It should be noted that the sample locations immediately south of the former surface impoundments (2WSED15, 4WSED3, and 2WSED17) will be capped as part of the former surface impoundments cap repair removal action.

Removal action activities to address wetland sediment hot spot areas will include: (1) excavation of the hot spot area to a depth of one foot below existing grade; and (2) restoration of the hot spot area by backfilling the excavated area with imported material to the pre-excavation elevation and revegetating the backfilled area. To the extent possible, the excavated sediments will be placed below the repaired former surface impoundments cap to support the final cap contours for runoff control. The proposed excavation depth of one foot is based on the absence of screening level exceedences in all samples collected from the 1 to 2 foot depth interval except for one COPEC at one location (2-methylnapthalene at NB2SE06 as shown on Figure 3). Details of the wetland sediment hot spot remediation activities are described below.

The hot spot areas to be addressed by this removal action are shown on Figure 3. These include two areas northeast of the former surface impoundments (Areas A and B on Figure 3), and one area immediately north of Marlin Avenue (Area C on Figure 3). As noted above, sample locations immediately south of the former surface impoundments will be capped as part of the former surface impoundments cap repair removal action. Although above the ERL/ERM midpoint, the zinc concentrations at sample locations NF4SE13 and 3WSED9 are below the maximum zinc concentration in the background sediment data set and thus are not proposed for remediation based on a risk management evaluation. The 2-methylnapthalene ERL/ERM exceedence at NB2SE06 is not proposed for remediation based on a risk management/lines of evidence approach considering: (1) no COPEC exceedences of the ERL/ERM midpoint were noted in the surface (0-0.5 foot depth interval) sample from this location; (2) no other COPEC concentrations, including total low molecular weight PAH (LPAH), total high molecular weight PAH (HPAH), and total PAH concentrations, in the 1-2 foot sample exceeded the midpoint of their

respective ERL/ERM values; and (3) no COPEC exceedences were noted in samples from any adjacent locations.

A. Preconstruction Activities

Preconstruction activities for the wetland sediment hot spot remediation will consist of field inspection of proposed remediation areas, verification of the area boundaries, preparation of engineering drawings and technical specifications, and preparation of a HASP. The engineering drawings and technical specifications will be submitted to EPA for review and approval prior to contractor mobilization for the wetland sediment hot spot remediation work. The HASP will be prepared in compliance with Occupational Safety and Health Administration and EPA requirements. The HASP will be submitted to EPA and will be in place prior to any onsite construction activities.

Backfill Quality Assurance Plan

In order to assure that clean imported backfill is used, one or more representative samples of material to be used for backfilling will be collected for chemical analysis. Samples will be collected using a shovel or other appropriate device directly from the proposed material borrow area.

Sample Analyses - The borrow material sample(s) will be tested as follows:

- Volatile organic compounds (VOCs) by EPA Method 8260B
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270C
- Organochlorine pesticides by EPA Method 8081A
- PCBs by EPA Method 8082
- Metals by EPA Method 6010B
- Mercury by EPA Method 7471A
- Moisture Content by Standard Methods 2540G

The specific analytes within the above analyte classes will be as specified in Table B-4 of the approved Gulfco RI/FS Field Sampling Plan (FSP) (PBW, 2006a).

Construction Quality Assurance Plan

The CQAP for the wetland sediment hot spot remediation is provided below. This plan describes the project-specific components of the performance methods and quality assurance program to ensure that the completed project meets or exceeds all design criteria, plans, and specifications.

Responsibilities and Authorities - The CQA Officer will be Eric Pastor, P.E. of PBW. Mr. Pastor will be assisted in the day-to-day project inspection activities by other PBW personnel, all of whom will have an appropriate level of engineering and/or consulting experience for their assigned responsibilities. Elevations of the existing (pre-excavation) sediment surface, the excavation base (to confirm the required one foot excavation depth), and the restored sediment surface will be determined by a Texas

licensed surveying subcontractor. EPA and/or its contractors may perform additional construction inspection/oversight at EPA's discretion.

CQA Qualifications - Mr. Pastor's and PBW's qualifications were provided to EPA in a letter dated August 26, 2005. As noted above, all PBW inspection personnel will have an appropriate level of engineering and/or consulting experience for their assigned responsibilities. Qualifications for the surveying subcontractor (Doyle & Wachstetter, Inc.) were provided to EPA in a letter dated April 24, 2007.

CQA Inspection and Verification Activities – A CQA inspector will be on-site to monitor the performance of sediment hot spot remediation activities; verify compliance with the engineering design and technical specifications; and ensure compliance with all health and safety procedures. The CQA inspector will verify that the sediment hot spot remediation activities have been performed in accordance with this Work Plan and the project specifications. As noted above, pre-excavation, post-excavation, and post-restoration sediment surface elevations will be determined by the surveying subcontractor. CQA inspection documentation will be performed in accordance with SOP No. 1 provided in Appendix A of the approved RI/FS FSP. This documentation will be retained in the project files in accordance with the requirements of Section XI of the AOC.

Regulatory Compliance Plan

As noted previously, removal actions under Section 106 of CERCLA are required to meet the substantive requirements of other laws unless an ARAR waiver is granted by the lead regulatory agency. Substantive ARARs of potential interest to the wetland sediment hot spot remediation include the location-, action-, and chemical-specific requirements discussed below.

Location-specific requirements – Location-specific requirements for the wetland hot spot remediation work include the following:

- Potential ARARs associated with wetlands are described in EPA's Considering Wetlands at CERCLA Sites (EPA, 1994). As described therein, a primary potential ARAR related to wetlands is Section 404(b)(1) of the Clean Water Act (CWA), promulgated as regulation in 40 CFR 230.10, which generally prohibits discharge of dredged or fill material to wetlands, subject to consideration of practicable alternatives and the use of mitigation measures. Per 40 CFR 6.302(a), Executive Order 11990 further requires that any activities performed within wetland areas minimize the destruction, loss, or degradation of wetlands. Care will be taken during the wetland sediment hot spot remediation work to keep impacts on adjacent wetland areas to a minimum and to restore impacted areas.

- The wetland areas are located within the 100-year coastal floodplain. Per 40 CFR 6.302(b), Executive Order 11988 requires that any actions performed within the floodplain avoid adverse effects, minimize potential harm, and restore and

preserve natural and beneficial values of the floodplain. Care will be taken during the wetland remediation work to comply with these requirements.

Action-specific requirements – Action-specific requirements for the hot spot wetland remediation include the following:

- OSHA requirements pertaining to hazardous waste operations (29 CFR Part 1910.120) will be followed during all on-site work.

- The substantive Texas Pollutant Discharge Elimination System (TPDES) requirements for storm water discharge from construction sites apply to the wetland hot spot remediation work. The applicable requirements, which may include: (1) filing of a Notice of Intent (NOI) for coverage under TPDES General Permit No. TXR150000; (2) preparation of a storm water pollution prevention plan (SWPPP); and (3) compliance with the General Permit and SWPPP technical requirements, will be followed during all removal action activities.

Chemical-specific requirements – Chemical-specific requirements for the wetland hot spot remediation work include the ecological screening criteria described above (ERL, ERM and AET values), which were used as the basis for identifying the hot spot areas to be remediated.

Waste Management Plan

The primary wastes generated by the wetland hot spot remediation work are surface vegetation from the areas to be excavated and excavated sediments. Depending on the specific volumes of sediment excavated and the cap capacity, some or all of the excavated material will be placed under the repaired cap of the former surface impoundments. The engineering drawings and technical specifications described previously will contain estimates of the excavated sediment volumes to be placed under the cap area. The removed vegetation and any excavated sediment not placed under the cap will be managed at an off-site disposal facility. Based on existing data, any excavated sediment to be disposed off-site will be classified as Class 2 non-hazardous. This material will either be placed directly into waste haulers for transport to the non-hazardous disposal facility listed in Table 6, or will be temporarily stored in on-site roll-off bins for subsequent transport to the disposal facility. All off-site transportation and management will be performed in accordance with applicable USDOT requirements. All materials will be managed at a facility that is in compliance with EPA's "Off-Site Rule".

Emissions Control Plan

No appreciable air emissions, except for routine exhaust from vehicles and construction equipment, are anticipated during the wetland hot spot remediation work. Dust may be generated during vegetation removal activities. Dust control through water application and/or other measures will be performed as necessary to keep dust generation to a minimum. As a result, no air or dust monitoring during the wetland hot spot remediation work is proposed.

Contingency Plan

This contingency plan describes procedures to minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste constituents, procedures to be followed in the event of a spill, and procedures to be followed for movement of equipment and personnel from low-lying areas during a high water event.

Spill Prevention – Since no liquid wastes and no hazardous wastes will be handled during the wetland hot spot remediation work, the potential for spills is anticipated to be low. The greatest spill potential may be during on-site refueling/maintenance of construction equipment, or from releases from equipment hydraulic lines if a rupture were to occur. Spill control and cleanup kits along with fire extinguishers and eye wash kits will be located in the work area as a contingency for such potential spills.

Spill Response/Notification – In the event of a spill, field crews will immediately contain the spill as necessary to prevent a release and notify on-site CQA and EPA representatives. If not on-site, the EPA OSC will be notified immediately thereafter. In the event of any spill which causes or threatens a release of waste material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondents shall immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer, Emergency Planning and Response Branch, EPA Region 6, 214-665-3166, and the EPA Regional Emergency 24-hour telephone number, 1-866-372-7745. In addition, in the event of any release of a hazardous substance from the Site which, pursuant to Section 103 of CERCLA, requires reporting to the National Response Center, Respondents shall immediately notify the National Response Center at (800) 424-8802 and then the OSC at (866) 372-7745. A written report will be submitted to EPA within 7 days after a release of a hazardous substance from the Site that requires reporting to the National Response Center pursuant to Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the recurrence of such a release.

Site Activities during High Water Event – In the event that a high water condition (storm surge or hurricane) is predicted for the Site during the performance of the wetland hot spot remediation work, the construction contractor will take appropriate precautions to secure the work area and equipment. Depending on the specific conditions, these precautions may include evacuation of the Site. The contractor and the CQA officer will work closely with the EPA representatives to determine the appropriate precautions to be taken on a case-by-case basis depending on the timing and severity of the predicted high water conditions.

Health and Safety Plan

Prior to Site mobilization, the contractor for the wetland hot spot remediation will prepare a HASP in accordance with EPA's Standard Operating Safety Guide (PUB

9285.1-03, PB 92-963414, June 1992) and all currently applicable regulations found at 29 CFR 1910.120. The HASP will ensure the protection of the public health and safety during performance of the removal action and will be submitted to EPA for review. Changes to the plan recommended by EPA will be incorporated into the final plan that will be implemented during the pendency of the removal action. All requirements under the OSHA, 29 U.S.C. § 651 et seq., and under the laws of the State approved under Section 18 of the Federal OSHA laws, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include Hazardous Materials Operation, 20 CFR § 1910, as amended by 54 Fed. Reg. 9317 (March, 1989), all OSHA General Industry (29 CFR § 1910) and Construction (29 CFR § 1926) standards wherever they are applicable, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 CFR § 300, relating to the conduct of work at Superfund sites.

Schedule

The wetland hot spot remediation will be implemented as described herein. The name and qualifications (as necessary) of the proposed construction contractor for the wetland hot spot removal action will be submitted to EPA within thirty (30) calendar days of the Effective Date of AOC. Draft engineering drawings and technical specifications will be submitted within forty-five (45) calendar days of the Effective Date of AOC. Final engineering drawings and technical specifications will be submitted within fourteen (14) calendar days of receipt of EPA comments on the draft drawings and specifications. The removal action field activities shall be completed within forty-five (45) calendar days following receipt of EPA's approval of the final engineering drawings and technical specifications. At least ten (10) calendar days prior to initiating the removal action field work, the HASP shall be submitted to EPA for information only but not approval. The Draft Wetland Hot Spot Remediation Report (described below) shall be submitted to EPA within seventy five (75) calendar days following receipt of EPA's approval of the final engineering drawings and technical specifications. The Final Wetland Hot Spot Remediation Report shall be submitted to EPA within fourteen (14) calendar days following receipt of EPA comments on the Draft Wetland Hot Spot Remediation Report. Any associated documentation (e.g., final survey drawings, etc.) received after the Final Report is submitted will be provided as an addendum to the report.

B. Mobilization and Site Preparation

Mobilization and site preparation will involve mobilizing personnel, equipment, supplies and incidentals onto the project site; establishing all offices and facilities necessary to implement the project; and preparation of the site for the construction work. The major components of site preparation are:

- Utility Connections - Supplying electrical and potable water sources as necessary.

- Temporary Perimeter Dike Construction and Standing Water Removal – Constructing temporary dikes on the perimeter of the hot spot excavation areas

using adjacent sediments, and then pumping standing water (if any) out of the excavation areas.

- Clearing and Grubbing - Removing surface vegetation from the excavation areas and adjacent areas as necessary for access to the work and for constructing roads, work areas, and staging areas. Vegetated and unvegetated areas within the hot spot areas will be noted and measured to assure that pre-removal action conditions will be restored following completion of the work.

- Temporary Road Construction - Constructing temporary roads as necessary to provide access and egress to the site, and access and egress to the work areas.

- Work/Staging Area - Constructing work, staging and containment areas as necessary.

C. Removal Action Activities

Wetland hot spot remediation activities will consist of the tasks described below. Additional task details will be provided in the engineering drawings and technical specifications to be submitted for EPA review and approval as previously described.

Task 1 – Sediment Excavation – The purpose of this task is to excavate all sediments from within the identified hot spot areas to a depth of at least one foot. Following removal of surface vegetation, the sediment surface elevation within each hot spot area will be surveyed by the surveying subcontractor. Sediments from within each area will then be excavated. Excavation of a given hot spot area will be considered complete when the excavation base elevations have been confirmed by a post-excavation survey to be at least one foot lower than the pre-excavation elevation at all control points within the hot spot area.

Task 2 – Backfill Placement - The purpose of this task is to re-establish the pre-excavation sediment surface elevation. Imported clean material from an off-site location will be backfilled within the excavated area to the pre-excavation surface elevation as confirmed by field survey of the aforementioned control points by the surveying subcontractor.

Task 3 – Restoration - The purpose of this task is to complete restoration of the wetlands to pre-remediation conditions. Native wetland or floodplain plant species that match existing vegetation in the regional area will be re-planted in areas that were vegetated prior to remediation. Areas that are physically altered by construction equipment during remediation will also be re-vegetated to original conditions. Temporary perimeter berms constructed as part of site preparation activities will be removed and pre-remediation wetland conditions restored.

Acceptable plant species for restoration are shown below:

Smooth Cordgrass (Spartina alterniflora)

Marshhay Cordgrass (Spartina patens)
Olney Bulrush (Schoenoplectus americanus)
California Bulrush (Schoenoplectus californicus)
Salt marsh Bulrush (Schoenoplectus robustus)
Black Needlerush (Juncus roemerianus)
Sedges (Carex spp)
Common Reed (Phragmites australis)
Seashore Paspalum (Paspalum vaginatum)
Seashore Salt Grass (Distichlis spicata)
Sea-oxeye (Borrichia frutescens)
Saw Grass (Cladium jamaicense)
Southern Cattail (Typha domingensis)
Narrow-leaved Cattail (Typha angustifolia)
Common Cattail (Typha latifolia)
Yellow Loosestrife (Lysamachia spp)
Pickerelweed (Pontederia cordata)
Arrowhead (Sagittaria spp)
Knotweed (Polygonum spp)
Saltwort (Batis maritima)
Shoregrass (Monanthocloe littoralis)
Carolina wolf berry (Lycium caroliniaum)
Spike sedge (Eleocharis sp.)
Glasswort (Salicornia bigelovii)
Eastern bacchari (Baccharis halimifolia)
Sumpweed (Iva frutescens)

The following plant species will not be planted:

Saltcedar (Tamarix sp.)
Chinese Tallow (Sapium sebiferum)

D. Site Restoration and Demobilization

After completion of the wetland sediments hot spot remediation work, any temporary roads and work areas will be dismantled and removed. Personnel, equipment, office trailer, supplies and incidentals that were used on the removal project will be removed from the site, unless required for the completion of other work at the Site.

E. Preparation of Final Report

A Final Report will be submitted for EPA review and approval as described previously. Any associated documentation (e.g., final survey, etc.) received after the Final Report is submitted will be provided as an addendum to the report. The Final Report will summarize the activities performed and will be submitted to the RPM/OSC for review and approval. The Final Report will include a description and survey map of the remediated hot spot areas, field reports, copies of all laboratory results, and

accompanying appendices containing all relevant documentation generated during the removal action.